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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,435	01/28/2005	Erich Klein	AT02 0049 US	1268

24738 7590 09/01/2006

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EXAMINER	
SAUNDERS JR, JOSEPH	
ART UNIT	**PAPER NUMBER**
2631	

DATE MAILED: 09/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/523,435	KLEIN ET AL.	
	Examiner	Art Unit	
	Joseph Saunders	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This is the initial office action based on the application filed on January 28, 2005. Claims 1 – 5 are currently pending and considered below.

Information Disclosure Statement

2. The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

Specification

3. The disclosure is objected to because of the following informalities: In the specification when referring to the arrangement of the membrane the applicant uses the term parallel to describe the relationship to the transducer axis. The examiner feels that the membrane is not parallel to the transducer axis but rather perpendicular. This problem also occurs when describing the relationship of other components to the transducer axis. On page 3 line 5 there is a typographical error, "secrond" should be "second". Also, on page 7 lines 27 and 28 contain acronyms that must be defined in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 states "membrane is arranged parallel to the transducer axis so as to be oscillatory", however for the membrane to be oscillatory it would be arranged perpendicular to the transducer as depicted in Figure 1. The examiner will examine the claim as stating "membrane is arranged perpendicular to the transducer axis so as to be oscillatory. Claim 5 is a dependent claim that depends on

claim 5. A dependent claim cannot depend on itself. When examining claim 5 the examiner will interpret claim 5 to depend from claim 1.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Bilan et al. (US 6,243,472 B1).

Claim 1: Bilan discloses an electroacoustic transducer with a transducer axis and comprising a membrane (speaker cone 20), which membrane is arranged parallel to the transducer axis so as to be oscillatory, and comprising a magnet system (magnetic assembly 105), which magnet system is equipped with two magnet-system components (annular shaped axially oriented magnet 16 with front plate 62 and center pole 60), which magnet-system components bound an air gap (magnetic gap 55), and comprising a moving coil (voice coil 45), which moving coil is, in part, arranged in the air gap and is connected to the membrane, and comprising a circuit module (amplifier circuit 130), which circuit module is equipped with a circuit frame (substrate 134) and at least one circuit component (integrated circuit 32) of a transducer circuit, mounted on the circuit frame, wherein the magnet system is arranged in an annular shape and encloses an

inner space, which inner space is accessible from outside the magnet system during production of the transducer and before the circuit module is mounted, and wherein the at least one circuit component is arranged on a first carrier surface of the circuit frame which first carrier surface faces the membrane, and in the inner space of the magnet system (Figures 5 – 7, Column 6 Lines 7 – 31).

Claim 2: Bilan discloses an electroacoustic transducer as claimed in claim 1, wherein just one single circuit component (integrated circuit 32) is provided, which is formed by an integrated circuit (integrated circuit 32) connected to circuit frame (substrate 134), which integrated circuit forms the transducer circuit (Figure 7).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bilan et al. (US 6,243,472 B1).

Claim 3: Bilan discloses an electroacoustic transducer as claimed in claim 2, wherein the integrated circuit (32) is embedded in a jacket (or package, Figure 7) and wherein two connection contacts (both labeled pin 2 in Figure 3) are provided on the jacket,

each of which connection contacts is connected to a moving-coil contact (voice coil 45). Bilan does not disclose the material of the jacket, however It would be obvious to one of ordinary skill in the art at the time of the invention to use a plastic packaged integrated circuit, although ceramic packaging has been used in the past, since plastic was the most common material for packaging used at the time of the invention and still is due to commercial viability.

Claim 4: Bilan discloses an electroacoustic transducer as claimed in claim 1, Bilan does not disclose wherein four connecting contacts, each having the shape of an annular sector, are provided on a second carrier surface of the circuit frame which second carrier surface faces away from the membrane. Bilan does disclose electrical connector 126 through which electronic power and an appropriate audio signal may be provided (Column 6 Lines 29 – 31). Bilan shows this connector coming from the underside of the speaker and connecting to the amplifier circuit but does not detail exactly how it is connected. Bilan does mention that the amplifier circuit could be manufactured with components mounted on both sides (therefore the second surface may have components too) and that the creation of electrically conductive traces and component pads are suitable on the component side therefore it would be obvious to one of ordinary skill in the art at the time of the invention that the electrical connector of Bilan would connect to contacts on the substrate since having a contacts on the substrate for the electronic power and audio signal would allow the signal to be fed by traces to the integrated circuit. Bilan only discloses three contacts but it would be obvious to one of

ordinary skill in the art at the time of the invention to include a fourth contact to allow for a negative voltage to be supplied to the integrated circuit allowing for a positive and negative voltage swing of the output. Bilan does not show where each of the contacts has the shape of an annular sector but it would be obvious to one of ordinary skill in the art at the time of the invention that by varying the shape of the contacts one would be able to optimize the layout of the printed circuit board.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bilan et al. (US 6,243,472 B1) in view of Iijima et al. (5,583,945).

Claim 5: Bilan discloses an electroacoustic transducer as claimed in claim 1, but does not disclose wherein the circuit module is of a design that can be removed without separate tools. Iijima discloses a speaker of similar construction where the "magnetic circuit can be assembled without using an adhesive, and can be readily disassembled to replace a defective element, if any, by a proper one" (Column 5 Lines 9 – 17) without the use of separate tools. It would be obvious to one of ordinary skill in the art at the time of the invention to design the magnetic circuit of Bilan in a manner similar to the magnetic holding portion, in which the magnetic circuit can be readily disassembled, as disclosed by Iijima since having a magnetic circuit that can be readily disassembled would allow for the circuit module to be replaced if it becomes defective.

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bilan et al. (US 6,243,472 B1) in view of Yoo et al. (US 6,385,328 B1).

Claim 6: Bilan discloses an electroacoustic transducer as claimed in claim 1, wherein the transducer has a pot-shaped housing but does not disclose wherein, in the direction of the transducer axis, its height has a value between 2.0 mm and 5.0 mm and its diameter perpendicular to the direction of the transducer axis has a value between 6.0 mm and 20.0 mm. Bilan does disclose that the speaker can be a tweeter and it is known that tweeters can be made in this size range. Yoo et al supports the fact that speakers can be made in this size range when disclosing a pot-shaped speaker that is 4mm in height and 20mm in diameter (Column 2 Lines 12 – 13). It would be obvious to one of ordinary skill in the art at the time of the invention that if desired the speaker of Bilan could be made to the size of Yoo since doing so would allow the speaker in to be used in smaller applications.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. Klein et al. (US 6,463,161 B2) discloses an electroacoustic transducer having contact holding assembly for the electrical connection of the transducer.

b. Frasl et al. (6,072,886) discloses an electroacoustic transducer comprising spring contacts contained on the underside of the transducer centro-symmetrical with respect to a transducer axis.

c. Klein (US 6,671,384 B1) discloses an electroacoustic transducer mounted on a printed circuit board with the aid of a holder.

d. Bleim et al. (US 6,370,257 B1) discloses an electroacoustic transducer having terminal contacts that form part of the retaining means of a printed circuit board.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Saunders whose telephone number is (571) 270-1063. The examiner can normally be reached on Monday - Thursday, 9:00 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Myhre can be reached on (571) 270-1065. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JS
8-30-06

James W. Myhre
Supervisory Patent Examiner